20. $y(\sin x)y(\cos x) = f^2(x)$.

The right-hand side function is assumed to satisfy the condition $f(x) = \pm f\left(\frac{\pi}{2} - x\right)$. To be specific, we take $f(x) = f\left(\frac{\pi}{2} - x\right)$.

Solution in implicit form:

$$y(\sin x) = \pm f(x) \exp\left[\Phi(\sin x,\ \cos x)\right],$$

where $\Phi(x, z) = -\Phi(z, x)$ is any antisymmetric function of two arguments.

Reference

Polyanin, A. D. and Manzhirov, A. V., *Handbook of Integral Equations: Exact Solutions (Supplement. Some Functional Equations)* [in Russian], Faktorial, Moscow, 1998.

